CLAIMS

What is claimed is:

1. A method of obtaining a parameter of interest of an earth formation using a tool conveyed within a borehole in the earth formation, the tool having a body with a finite, non-zero conductivity, said method comprising:
   (a) using a transmitter on the tool for producing a first electromagnetic signal in the earth formation;
   (b) using at least one receiver axially separated from said transmitter on said tool for receiving a second temporal signal resulting from interaction of said first signal with the earth formation, said second temporal signal dependent upon said conductivity and said parameter of interest; and
   (c) using a processor for obtaining from said second signal a third temporal signal indicative of said parameter of interest and substantially independent of said conductivity.

2. The method of claim 1, further comprising using said processor for determining from said third signal said parameter of interest.

3. The method of claim 1, wherein said parameter of interest is at least one of (i) a resistivity of said formation, and, (ii) a distance to a bed boundary in said formation.

4. The method of claim 1, wherein a sensitivity of said third temporal signal to said earth formation is substantially independent of a spacing between said transmitter and said at least one receiver.

5. The method of claim 4, wherein said spacing between said transmitter and said at least one receiver is approximately 2 meters.

6. The method of claim 1, wherein using said processor in (c) further comprises representing said second signal by a Taylor series expansion.

7. The method of claim 6, wherein said Taylor series expansion is in one half of odd integer powers of time.

8. The method of claim 7, further comprising subtracting from said second signal at least one leading term of the Taylor series expansion.

9. The method of claim 1, wherein using said processor in (c) further comprises applying a filter operation to said second signal.

10. The method of claim 9, wherein said filtering operation further comprises a differential filtering operation.

11. The method of claim 10, wherein said differential filtering operation is of the form $\frac{\partial\left(t^{1/2}H_z\right)}{\partial t}$

wherein t is time and H_z is a representation of said second signal.

12. The method of claim 9, wherein said filtering operation further comprises an integral filtering operation.

13. The method of claim 12, wherein said integral filtering operation further comprises defining a first and a second specified time.

14. The method of claim 1 wherein said tool is conveyed into the earth formation on one of (i) a drilling tubular, and, (ii) a wireline.

15. A system for determining a parameter of interest of an earth formation having a borehole therein, comprising:

(a) a tool for use within said borehole, said tool having a body with a finite, non-zero conductivity;

(b) a transmitter for producing a first electromagnetic signal in the earth formation;

(c) at least one receiver axially separated from said transmitter on said tool for receiving a second temporal signal resulting from interaction of said first

signal with the earth formation, said second temporal signal dependent upon said conductivity and said parameter of interest; and

(d) a processor for obtaining from said second signal a third temporal signal indicative of said parameter of interest and substantially independent of said conductivity.

16. The system of claim 15, wherein said processor determines from said third signal said parameter of interest.

17. The system of claim 15, wherein said parameter of interest is at least one of (i) a resistivity of said formation, and, (ii) a distance to a bed boundary in said formation.

18. The system of claim 15, wherein a sensitivity of said third temporal signal to said earth formation is substantially independent of a spacing between said transmitter and said at least one receiver.

19. The system of claim 18, wherein said spacing between said transmitter and said at least one receiver is approximately 2 meters.

20. The system of claim 15 , wherein said processor represents said second signal by a Taylor series expansion.

21. The system of claim 20, wherein said Taylor series expansion is in one half of odd integer powers of time.

22. The system of claim 21, wherein said processor further subtractins from said second signal at least one leading term of said Taylor series expansion.

23. The system of claim 15, wherein said processor in further applies a filtering operation to said second signal.

24. The system of claim 23, wherein said filtering operation further comprises a differential filtering operation.

25. The system of claim 24, wherein said differential filtering operation is of the form

$$\frac{\partial\left(t^{1/2}H_z\right)}{\partial t}$$

wherein t is time and H_z is a representation of said second signal.

26. The system of claim 23, wherein said filtering operation further comprises an integral filtering operation.

27. The system of claim 26, wherein said integral filtering operation further comprises defining a first and a second specified time.

28. The system of claim 15 further comprising a drilling tubular for conveying said tool into the earth formation.

29. The system of claim 15 further comprising a wireline for conveying said tool into the earth formation.